To: Orme-Zavaleta, Jennifer[Orme-Zavaleta.Jennifer@epa.gov]; Shoemaker, Jody[shoemaker.jody@epa.gov]
Cc: Schumacher, Brian[Schumacher.Brian@epa.gov]; Sheldon, Linda[Sheldon.Linda@epa.gov]; Morgan, Jeffrey[Morgan.Jeffrey@epa.gov]; Magnuson, Matthew[Magnuson.Matthew@epa.gov]
From: Sayles, Gregory
Sent: Tue 1/28/2014 2:50:03 PM
Subject: RE: PPH in sediment?
propylene glycol phenyl ether treatability and fate suggestions jan 22.docx

Attached is a quick piece Matthew Magnuson of NHSRC wrote up last week that also looks at PPH properties.

From: Orme-Zavaleta, Jennifer
Sent: Tuesday, January 28, 2014 9:44 AM
To: Shoemaker, Jody; Sayles, Gregory
Cc: Schumacher, Brian; Sheldon, Linda; Morgan, Jeffrey
Subject: RE: PPH in sediment?

Good info, thanks!

Jennifer Orme-Zavaleta, Ph.D.
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From: Shoemaker, Jody
Sent: Tuesday, January 28, 2014 9:42 AM
To: Orme-Zavaleta, Jennifer; Sayles, Gregory
Cc: Schumacher, Brian; Sheldon, Linda; Morgan, Jeffrey
Subject: PPH in sediment?

I am by no means an expert on this compound, so I hope others will chime in and correct me if my assumptions are flawed.

Given that the compound, according to Dow's literature, is soluble in water at 15g/L and has a low octanol/water partition coefficient (1.41) I would GUESS that PPH does not accumulate much in the sediment, but rather stays in the water.

I also found a document form the CA EPA (http://www.arb.ca.gov/consprod/regact/2010ra/pph770354.pdf) that uses the Mackay level III fugacity model to estimate PPH's environmental distribution as 1.03% in air, 46.6% in water, 52.3% in soil, and 0.104% in sediment.

Dow's product safety assessment (PSA-below) indicates minimal tendency to bind to sediment.

Excerpt from DOW's PSA

Environmental releases[17] – PPh may slowly evaporate to air from coatings or other products containing it. Once PPh is introduced to water, the compound will tend to remain dissolved because it is slightly soluble in water.

Environmental Information[19]

PPh has a low volatility, and may evaporate slowly from products containing it. Although it is only slightly soluble in water, once dissolved, the compound will tend to remain in water. It has minimal tendency to bind to soil or sediment.

PPh is unlikely to persist in the environment. PPh is readily biodegradable, which suggests the chemical will be rapidly and completely removed from water and soil environments, including biological wastewater treatment plants.

PPh is not likely to accumulate in the food chain (bioconcentration potential is low) and is practically nontoxic to risha and other aquatic organisms on an acute basis.

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From: Orme-Zavaleta, Jennifer
Sent: Tuesday, January 28, 2014 8:24 AM
To: Sayles, Gregory
Cc: Schumacher, Brian; Shoemaker, Jody; Sheldon, Linda
Subject: RE: EOC Spot Report: Chemical Spill, Charleston WV – Update #19

Do we know the potential for any of this to get in to the sediment? If so, likely to be seeing this for a while and will need to monitor fish tissue and benthic organism levels…

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From: Sayles, Gregory
Sent: Monday, January 27, 2014 9:49 PM
To: Koglin, Eric; Bowling, Charlena; Ernst, Hiba; Lindquist, Alan; Nichols, Tonya; Ryan, Shawn; Jutro, Peter; Schumacher, Brian; Shoemaker, Jody; Orme-Zavaleta, Jennifer
Subject: Fw: EOC Spot Report: Chemical Spill, Charleston WV – Update #19

The work on this incident continues...see highlights

From: Eoc, Epahq
Sent: Monday, January 27, 2014 8:04:41 PM
Subject: EOC Spot Report: Chemical Spill, Charleston WV – Update #19

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EOC Spot Report: Chemical Spill, Charleston WV – Update #19

US Environmental Protection Agency

Report as of 2000 January 27, 2014

Overview: On January 10, the President approved an Emergency Declaration for the State of West Virginia after a chemical, 4-methylcyclohexanemethanol, (MCHM) leaked at a Freedom Industries chemical plant and into the Elk River in Charleston, WV. The spill occurred near the Kanawha Valley Water Treatment Plant which detected the chemical even after an increased carbon treatment effort was put in place. Freedom Industries is working to clean up the spill at the facility and in the river.

State, Local and other Federal Agency Actions: West Virginia water authorities issued a "Do Not Use Water Notice" for 10 counties and the President's Emergency Declaration covers eight counties. West Virginia American Water Company (WVAWC) customers were told not to use tap water for drinking, cooking, washing, or bathing. Water could be used for toilets and fire

emergencies. When the incident originally occurred, it contaminated drinking water for 300,000 people. The emergency declaration was closed on 1/20.

West Virginia Department of Homeland Security and Emergency Management has posted drinking water sampling results for MCHM as of January 26. Detectable levels continue to be seen. PPH results of earlier sampling are also posted. These samples were reported as non-detectable. See the website for results -http://www.dhsem.wv.gov/Pages/WV-American-Water-Emergency.aspx.

The facility is continuing to pump water upgradient of the secondary containment area. The majority of the site is frozen and most of the holes/sumps dug inside the tank containment are frozen and cannot be pumped.

The facility's contractor broke the surface ice on the containment trench at the base of the hill and added salt to help melt the ice. The liner was pulled back and water, above and below the liner, was pumped out and into a tank for temporary storage. The facility reported that there was no sheen or smell of MCHM in the water. Ice in the river continues to disrupt the river booms. The facility contractor is attempting to break ice and to properly position the booms. Because of the ice, the boom is repositioned further from the river bank, which will require a plan for proper maintenance. To research options, the USCG will contact northern stationed USCG personnel experienced with deploying boom in icy conditions.

The facility and its remediation consultant, CEC, met with WVDEP, EPA, and USCG today, to discuss the remediation plan. Based upon the meeting discussions WVDEP, EPA, and USCG gave verbal approval to begin sampling. The site team will further evaluate the plan, which will be approved later in writing.

In an effort to strengthen laboratory analysis of MCHM and PPH, chemists and lab managers from nine organizations including EPA, are working collaboratively to share information and analytical data about the mixture. Participants include the National Guard, WV American Water, American Water Research, REI Consulting, DuPont Inc., Dow Inc., Matric Inc., ATSDR, and EPA. The group is looking to identify analytical techniques that will allow for lower detection limits for the single compounds, MCHM and PPH, in water. The lower detection limits will increase the capacity of laboratories to detect MCHM and PPH in water at orders of magnitude below the health risk levels.

The Governor of West Virginia officially requested direct funding from FEMA today to assist the state and local agencies burdened with mitigating the affects of the spill. The Govenror requested Category B Emergency Protective measures, including direct funds to the nine counties currently evolved with spill response and recovery.

EPA Action: EPA Region 3 continues to monitor and provide oversight of facility activities at the Freedom Industries tank farm site and the Poca staging facility. EPA continues to coordinate with WVDEP and WVAWC.

Media Interest: High

http://www.wvgazette.com/News/watercrisis

The HQ EOC will continue to monitor and provide updates as needed.

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